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United States
Department of
Agriculture

Forest Service
Southern Region

Revised Land and Resource Management Plan

Sumter National Forest





Revised Land and Resource Management Plan

Sumter National Forest

**Abbeville, Chester, Edgefield, Fairfield, Greenwood, Laurens,
McCormick, Newberry, Oconee, Saluda, and Union Counties**

Responsible Agency:	USDA–Forest Service
Responsible Official:	Robert Jacobs, Regional Forester USDA–Forest Service Southern Region 1720 Peachtree Road, NW Atlanta, GA 33067-9102
For Information Contact:	Jerome Thomas, Forest Supervisor 4931 Broad River Road Columbia, SC 29212-3530 Telephone: (803) 561-4000

January 2004

The picnic shelter on the cover was originally named the Charles Suber Recreational Unit and was planned in 1936. The lake and picnic area including a shelter were built in 1938-1939. The original shelter was found inadequate and a modified model B-3500 shelter was constructed probably by the CCC from camp F-6 in 1941. The name of the recreation area was changed in 1956 to Molly's Rock Picnic Area, which was the local unofficial name. The name originates from a sheltered place between and under two huge boulders once inhabited by an African-American woman named Molly.

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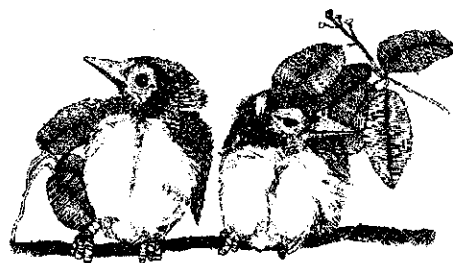
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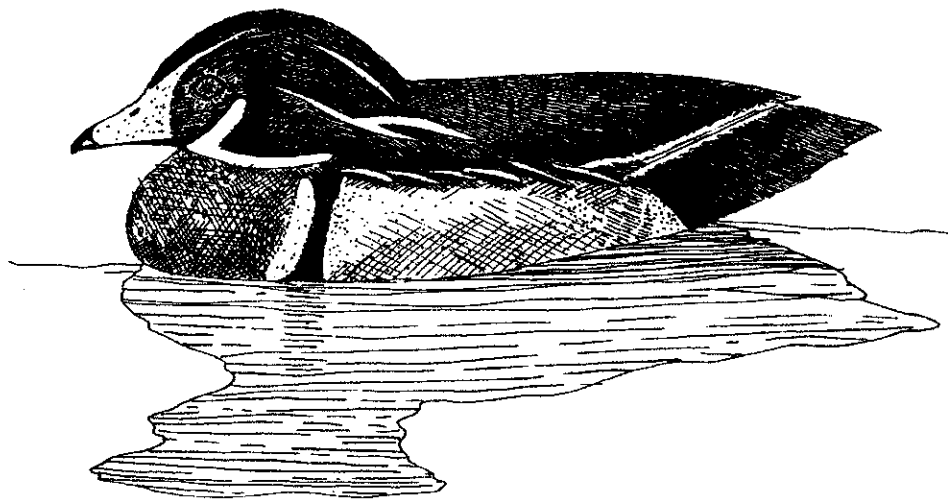
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Preface

This *Revised Land and Resource Management Plan* (Forest Plan) has been prepared according to Secretary of Agriculture regulations (36 CFR 219) which are based on the Forest and Rangeland Renewable Resources Planning Act (RPA) as amended by the National Forest Management Act of 1976 (NFMA). The Forest Plan has also been developed in accordance with regulations (40 CFR 1500) for implementing the National Environmental Policy Act of 1969 (NEPA). A detailed statement (Environmental Impact Statement) has been prepared as required by NFMA (36 CFR 219.10). The Forest Plan represents the selected alternative as identified in the *Final Environmental Impact Statement for the Revised Land and Resource Management Plan* (FEIS).

The document is divided into six major parts: the "Introduction to the Forest Plan," "Forest-Wide Direction," "Management Prescriptions," "Management Areas," "Plan Implementation," "Monitoring and Evaluation," and "Appendixes."

The "Introduction to the Forest Plan" provides background information that places the Management Direction into context with other management directives or procedures and trends occurring on the Sumter National Forest. The information includes the purpose of a Forest Plan: the decisions made; the relationship of the Forest Plan to other important documents that also provide management direction; a forest description; a summary of the "Analysis of the Management Situation" and a summary of the significant issues.

The "Forest-Wide Direction" section provides management direction that applies to the entire Sumter National Forest. This direction includes an introduction that explains how this direction

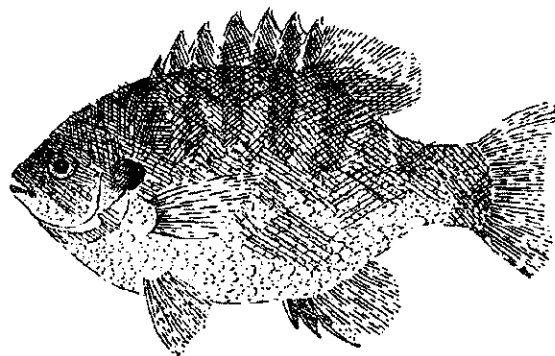
was developed and defines goals, objectives and standards. Followed by the specific goals, objectives and standards.

The "Management Prescriptions" section provides 27 unique land allocations on the Sumter. Within this section, management prescriptions are defined. Each prescription includes an emphasis, desired condition, objectives (if needed) and standards (if needed). At the beginning of this section you will find a map showing the location of each prescription and the acreage.

The "Management Areas" section provides four unique management areas on the Sumter. Within this section, the two types of management areas are defined. Each management area shows existing conditions, desired conditions (if applicable), objectives (if applicable), acreage of each management prescription, and standards (if applicable).

The "Plan Implementation, Monitoring and Evaluation" section includes information on the how the Forest Plan will be implemented and updated through monitoring and evaluation.

The "Appendixes" section contains more detailed information that may be helpful in understanding the Forest Plan. Items such as "Laws, Rules, Regulations, Manuals and Handbooks," "Monitoring Tasks," and "Glossary."



Chapter 1

Introduction to the Forest Plan

This Sumter National Forest *Revised Land and Resource Management Plan* (Forest Plan) will guide all natural resource management activities and set management standards for the Sumter National Forest for the next 10 to 15 years.

The National Forest Management Act (NFMA), implementing regulations, and other documents guided the preparation of this Forest Plan. Land-use determinations, management practices, goals, objectives, standards, and guidelines are statements of the Forest Plan's management direction. Projected yields, services, and rate of implementation depend on the annual budgeting process.

This Forest Plan provides broad program-level direction for management of the land and its resources. Future projects carry out the direction in this Forest Plan. This Forest Plan does not contain a commitment to select any specific project. An environmental analysis is conducted, when required, on these projects as they are proposed.

In addition to direction found in this Forest Plan, projects also are implemented through direction found in the Forest Service directive system (manuals and handbooks) and other guides. (See Chapter 5, "Monitoring, Evaluation, Research, and Implementation.")

Purpose of the Forest Plan

The decisions made in the Forest Plan include:

- Forest-wide multiple-use goals, objectives, and standards for the forest, including estimates of the goods and services expected;

- Multiple-use management prescriptions and management areas containing desired conditions, objectives and standards;
- Land that is suitable for timber production;
- The allowable sale quantity for timber and the associated sale schedule;
- Recommended wilderness areas;
- Recommended wild and scenic river status;
- Monitoring and evaluation requirements;
- Lands administratively available for mineral development (including oil and gas).

Relationship of the Forest Plan to Other Documents

In addition to direction found in this Forest Plan, projects are also implemented by direction found in laws, rules, regulations, the Forest Service directive system (A listing is available in "Appendix A."); and the following programmatic decision documents.

- Record of Decision, *Final Environmental Impact Statement for the Suppression of Southern Pine Beetles* (USDA Forest Service, Southern Region, April 1987)
- Record of Decision, *Final Environmental Impact Statement for Gypsy Moth Management in the United States: A Cooperative*

Forest Description

Plan Structure

The Forest Plan consists of five chapters, and several appendixes.

Chapter 1 introduces the Forest Plan; explains its purpose, structure, and relationship to other documents; includes a brief description of the forest; and summarizes the issues and analysis of the management situation for the revision.

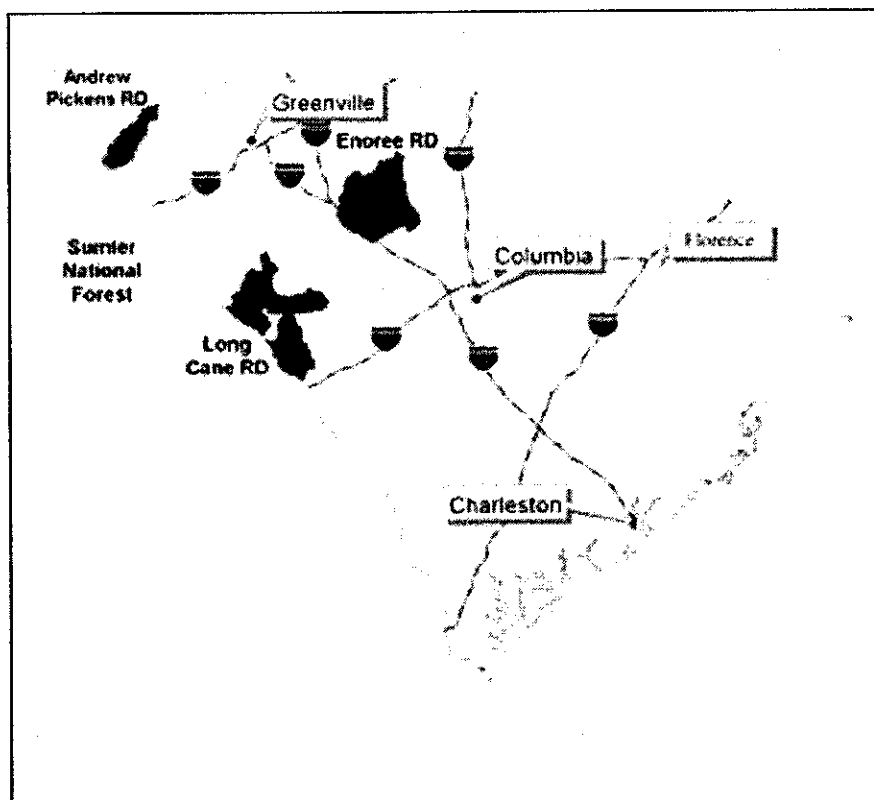
Chapter 2 contains the forest-wide management direction, including, desired conditions, goals, objectives, and standards.

Chapter 3 contains the management prescriptions and the specific management direction applied at that level, including, desired conditions, goals, objectives, and standards.

Chapter 4 contains the management area direction, including, desired conditions, goals, objectives, and standards.

Chapter 5 gives direction on Forest Plan implementation, monitoring, and evaluation. Appendixes provide supplemental information about the Forest Plan.

The Sumter National Forest includes about 360,000 acres of National Forest System land in the mountains and piedmont of South Carolina. The forest is divided into three ranger districts located in 11 counties. The Andrew Pickens District is located in northern Oconee County. The Enoree District is located east of Interstate 26 in Chester, Fairfield, Laurens, Newberry, and Union Counties. The Long Cane District lies east of the Savannah River and J. Strom Thurmond Lake in Abbeville, Edgefield, Greenwood, McCormick, and Saluda Counties.



Summary of the “Analysis of the Management Situation” (AMS)

The “Analysis of the Management Situation” (AMS) for the Sumter National Forest is a determination of the forest’s ability to supply goods and services in response to society’s demand. The AMS provides a basis for determining the need for change in the existing Forest Plan and for formulating a broad range of reasonable alternatives. A draft AMS was completed in August 1996. A few important findings follow:

- Although water quality continues to improve, many of the streams on the national forest are listed by the state of South Carolina as impaired due to elevated fecal coliform levels.
- According to South Carolina’s Department of Health and Environmental Control (DHEC), no violations of air quality standards have occurred on the Sumter National Forest. Following existing state guidelines should allow increased prescribed burning.
- Within the piedmont, early successional forests covered 16.9 percent and late successional forest covered 4.7 percent in 1996. This trend was reversed on the Andrew Pickens Ranger District where early successional forests covered 6.4 percent and late successional forests covered 31 percent in 1996. Since 1996 the early successional habitat has declined significantly to 5 percent on the piedmont and 2 percent on the Andrew Pickens in the year 2003.
- Inventory and monitoring have increased our knowledge of rare plant distributions, habitat requirements, and responses to management. The greatest number of rare plant species and populations is on the Andrew Pickens Ranger District in Oconee County.
- Very little existing old growth occurs on the Sumter National Forest.
- Southern pine beetle (SPB) has been the focus of the forest’s insect suppression efforts from 1985 to present. Activity is cyclical with outbreaks occurring in 1988-89, 1992-93, and 1995-96. Since 1996, approximately 78 percent of the forest’s pine stands (young, overstocked stands or stands greater than 60 years) are at great risk for SPB infestation. Another outbreak occurred in 2002.
- The hemlock woolly adelgid poses a long-term threat to hemlock on the forest.
- The Sumter National Forest represents a small portion of the timber inventory in South Carolina, but the quality of the material is generally higher than timber found on private land.
- Few requests are received for mineral exploration or mining operations.
- There were five roadless areas identified in the 1985 Forest Plan. The Ellicott Rock Extension was recommended for a wilderness study area. Long Creek and Ellicott Rock Expansion were placed in general forest management. The remaining two areas were placed in allocations that protected their roadless characteristics (i.e., scenic areas).
- In 1996, the following streams were determined to have outstandingly remarkable values and are eligible for possible inclusion in the National Wild and Scenic River System: Brasstown Creek, Cedar Creek,

Chauga River, Crane Creek, East Fork of the Chattooga River, Tamassee Creek, Stevens Creek, and Turkey Creek.

- Recreational uses of all kinds increased on the Chattooga Wild and Scenic River during the last 10 years.
- Since 1996 there has been a growing use/demand for OHV trails.
- Increased population growth and development in all counties is changing the character of the landscape. Continuing growth and development is reducing the open spaces that are now farms, forests, and pastures. This development may reduce wildlife habitat, change the scenic character of the landscape, and increase the wildland/urban interface concerns.
- Many counties are becoming less dependent on Forest Service dollars.
- The total forest road mileage has slightly decreased since 1985 from 1,110 miles to 1,053 miles.

A few of the important recommendations derived from the AMS follow:

- Establish goals, objectives, and desired conditions for riparian areas.
- Establish goals, objectives, and desired conditions that consider the key elements of biodiversity.
- Establish consistent management direction across national forest boundaries.
- Coordinate with the Chattahoochee National Forest in Georgia and the Nantahala National Forest in North Carolina to establish goals,

objectives, and desired conditions for the Chattooga River Watershed.

- Consider insects and disease in developing desired conditions and in evaluating alternatives and effects.
- Establish goals, objectives, and desired conditions for recreational opportunities and experiences.
- Establish goals, objectives, and desired conditions for developing minerals.
- Define the role of timber production when developing desired conditions.
- Update the Visual Quality Objective system with the Scenery Management System.
- Recommend to Congress proposed wilderness and wild and scenic river designations.
- Remove direction from the revised Forest Plan that is not decided in the forest planning process, such as that included in the directive system, national policy, and executive orders.
- Link forest-wide and management area objectives to desired conditions, rather than to specific resource output targets.
- Revise the monitoring and evaluation direction to include effectiveness monitoring for Forest Plan goals, objectives, and desired conditions.



Summary of the Issues

Public involvement is a key part of the planning process. Our goals for public involvement were to ensure that all individuals and groups interested in or affected by the management of the Sumter National Forest had the opportunity to be informed and participate in the revision process; to reach an informed understanding with the public of the varying interest; and to consider these interests in developing this Forest Plan.

Public comments were used to identify the direction management should take in the future. This management includes goods and services to be provided, and environmental conditions. Many opportunities were provided for people to get involved in the planning process and to provide comments. Issues submitted by the public, as well as from within the Forest Service, guided the need to change current management strategies.

The Notice of Intent to prepare an environmental impact statement was published in August 1996. In September 1996 scoping notification was sent to interested and affected members of the public announcing the 120-day comment period and associated listening sessions. The scoping notification also ask for comments on the draft "Analysis of The Management Situation."

A four-phase process was used to develop alternatives. Based on the issues and public comments, four preliminary alternatives were developed. Public meetings were held throughout the state, and comments were solicited on the preliminary alternatives. Based on these comments, the five Southern Appalachian forests (National Forests in Alabama, Chattahoochee-Oconee, Cherokee, Sumter, and Jefferson) met and developed an additional four alternatives. Finally, a "Rolling Alternative" was created, based on criteria that addressed the Natural Resource Agenda (Watershed Health, Recreation, Sustainable Forest Ecosystem Management, and Forest Roads), Regional Forester's Emphasis Areas (Watershed Health/Water Quality, Habitat for

Wide-ranging Species, Proposed, Endangered, Threatened Species (PETS) Recovery Plans, Old Growth, Semi-Primitive Recreation Opportunities, Roadless Areas, Special Areas, and a consistent approach to determining lands suitable for timber production), issues common to all five national forests, and the issues unique to each of the forests.

The issues developed for the Sumter National Forest follow. Brief explanations of how the issue will be addressed in the Forest Plan follow each issue statement. For further information, see the *Final Environmental Impact Statement*, Chapter 2, "Comparison of Alternatives."

- 1. Terrestrial Plants and Animals and their Associated Habitats:** How should the national forest retain and/or restore a diverse mix of terrestrial plant and animal habitat conditions while meeting public demands for a variety of wildlife values and uses?
Emphasize habitat conditions that are suitable for maintaining viable populations of all vertebrate species native to the planning area. Early successional habitats will be created and maintained by a variety of events, conditions, treatments, and activities.
- 2. Threatened, Endangered, and Sensitive/Locally-rare Species:** What levels of management are needed to protect and recover the populations of federally-listed threatened, endangered, and proposed species? What level of management is needed for Forest Service sensitive and locally rare species?
Emphasize the inventory, monitoring, conservation, and recovery of proposed, threatened, endangered, sensitive, and locally-rare species or their habitats.
- 3. Old Growth:** The issue surrounding old growth has several facets. How much old growth is desired? Where should old

growth occur? How should old growth be managed?

Provide areas where old growth forest conditions are developed over time. Protect existing old growth.

4. **Riparian Area Management, Water Quality, and Aquatic Habitats:** What are the desired riparian ecosystem conditions within national forests, and how will they be identified, maintained, and/or restored? What management direction is needed to help ensure that the hydrologic conditions needed for the beneficial uses of water yielded by and flowing through national forest system lands are attained? What management is needed for the maintenance, enhancement, or restoration of aquatic habitats?

Healthy watersheds will be maintained, and degraded watersheds will be restored to maintain or improve water quality and aquatic habitats. Riparian ecosystems will be essentially unchanged, except for those actions needed to restore riparian vegetative cover and riparian functions and values.

5. **Wood Products:** The issue surrounding the sustained yield production of wood products from national forests has several facets. What are the appropriate objectives for wood product management? Where should products be removed, given that this production is part of a set of multiple-use objectives and considering cost effectiveness? What should the level of outputs of wood products be? What management activities associated with the production of wood products are appropriate?

Restore and maintain desired conditions and goals, which produce a stable supply of a variety of wood products including high quality sawtimber on the piedmont.

6. **Aesthetic/Scenery Management:** The issue surrounding the management of visual quality has two facets. What are the appropriate landscape character goals for the national forest? What should be the scenic integrity objectives for the national forest?

National forest landscapes have a natural appearing or natural evolving character and are managed to maintain or enhance their scenic integrity.

7. **Recreation Opportunities/Experiences:** This issue includes considering a full range of opportunities for developed and dispersed recreational activities (including such things as nature study, hunting and fishing activities, and trail uses). How should the increasing demand for recreational opportunities and experiences be addressed on the national forest while protecting forest resources? Should the forest restrict equestrian use to designated routes only?

Provide a spectrum of high quality, nature-based recreational settings and opportunities, within the capabilities of the land, which are not widely available on non-federal lands.

8. **Roadless Areas/Wilderness Management:** Should any of the roadless areas on national forest system lands be recommended for wilderness designation? How should roadless areas not recommended for wilderness be managed? How should areas recommended for wilderness designation be managed? How should the patterns and intensity of use, fire, and insects and diseases be managed in the existing wilderness areas?

Wilderness and roadless areas are managed to provide their full range of social and ecological benefits.

9. **Forest Health:** What conditions are needed to maintain the ability of the forest to function in a sustainable manner as expected or desired? Of particular concern are the impacts of non-native species and the presence of ecological conditions with a higher level of insect and disease susceptibility.

Restore and maintain forest ecosystems to provide the desired composition, structure, function, and productivity of those ecosystems over time.

10. **Special Areas and Rare Communities:** What special areas should be designated, and how should they be managed? How should rare communities, such as those identified in the *Southern Appalachian Assessment*, be managed?

Protect and restore all existing special areas and rare communities.

11. **Wild and Scenic Rivers:** Which rivers are suitable for designation into the National Wild and Scenic River System? How should rivers that are eligible, but not suitable, be managed?

Manage all existing, recommended, and eligible rivers to protect their outstandingly remarkable values.

12. **Access/Road Management:** How do we balance the rights of citizens to access their national forest with our responsibilities to protect and manage the soil and water resources, wildlife populations and habitat, aesthetics, forest health, and desired vegetative conditions?

Provide the minimum transportation system that would supply and improve access for forest road users while protecting forest resources.

13. **Chattooga River Watershed:** How can the national forests manage the Chattooga River watershed for desired

social and ecological benefits while protecting the outstanding values of the Chattooga Wild and Scenic River corridor? Should the Chattooga River be opened or closed to public boating above Highway 28?

The Chattooga River watershed will be managed to emphasize recreation in association with the Chattooga Wild and Scenic River corridor; maintenance of roadless values; dispersed recreational opportunities; and improved water quality. Boating on the Chattooga is not allowed above the Highway 28 Bridge.

14. **Minerals:** What type of restrictions should we place on mineral development?

Mineral exploration or development will be compatible with the desired condition of the appropriate management prescriptions or management areas.

The issues are further addressed in a variety of ways throughout this Forest Plan. Those ways include goals, objectives, standards, management prescriptions, management areas, and monitoring.



Chapter 2

Forest-Wide Direction

The Forest Plan is a strategic document providing land allocations, goals, objectives, desired conditions, and standards that must be met. This chapter outlines the overall management direction for the Sumter National Forest within the context of the southern Appalachian and piedmont ecosystems. This direction is organized around the physical, biological, and social resources of the Sumter, as well as the major issues identified by the citizens who helped develop this Forest Plan.

Each resource includes broad goal statements describing what we want to achieve. Objectives are concise statements, describing a specific result or condition desired to contribute toward achieving a goal. Objectives express measurable steps we will take over the next 10 years to achieve our goals and may be accomplished by maintaining a desired condition or by implementing a project or activity. Not all goals require quantifiable objectives. Objectives are linked to the monitoring plan.

While goals and objectives define where we are headed with management of the Sumter National Forest, standards define the rules we will follow to get there. Standards provide management direction for making decisions, which help achieve the forest's desired conditions, goals, and objectives. Standards are specific technical resource management directions and often preclude or impose limitations on management activities or resource uses, generally to protect the environment, to provide public safety, or to resolve an issue. Deviation from a standard requires a Forest Plan amendment. Adherence to Forest Plan standards is monitored during project implementation. In addition to following standards, the Sumter is required to comply with applicable laws, executive orders, and regulations listed in Appendix A.

Forest-wide goals, objectives, and standards apply to the entire forest unless superseded by specific management prescription direction. Objectives and standards may also be found at the management area and management prescription level. Projects are evaluated to determine if they are consistent with the management direction in the Forest Plan. This evaluation is documented in the project-level environmental document with a finding of consistency incorporated into the decision document.

While this direction was being developed, the forest identified some additional items that would not qualify as Forest Plan direction but are important for later plan implementation.

Any decisions on projects to implement the Forest Plan are based on site-specific analysis in compliance with the National Environmental Policy Act (NEPA). This environmental analysis is appropriately documented based on direction in the *Council on Environmental Quality Regulations For Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR Parts 1500-1508) and the *Environmental Policy and Procedures Handbook* (Forest Service Handbook [FSH] 1909.15).

Riparian Area Management, Water Quality, Aquatic Habitats, Soil, and Air

In 1911, Congress authorized and directed the Secretary of Agriculture "...to examine, locate, and purchase such forested, cut-over, or denuded lands within the watersheds of navigable streams as in his judgment may be necessary to the regulation of the flow of navigable streams or for the production of timber," through the Weeks

Law. In 1936, as a result of this Act, the Sumter National Forest was established from these lands. Once established, the process of natural and managed restoration of those lands began. Erosion control projects, tree planting, and fire prevention and control are examples of management actions began to assist in restoring and protecting the natural forestland and resources. However, even with restoration efforts, past land abuses have left a legacy on the landscape of substantial areas with affected soils and streams that are still adjusting and needing improvement after many decades.

Soil and water conservation measures are necessary to maintain or improve many of the physical, chemical, and biological conditions on the national forest. Soil properties affect the processing of rainfall into streamflow and provide the basic elements from which plant and animal life exist. Streamflow maintains aquatic life, stream channel capacity, recreation, aesthetics, navigable waters, and favorable flow conditions.

Although water quality continues to improve, many of the streams on the Sumter remain impaired or impacted as identified by SC Department of Health and Environmental Control or the Environmental Protection Agency. Physical, chemical, and biological decline contribute in considerations of whether waters are listed as impaired. Fecal coliform, sediment or other water quality conditions caused by past or current activities contribute to impairment. Sedimentation in the Chattooga River is an example of how many activities influence water quality (Van Lear et. al., 1995). Past land abuses are often slow to recover. Some poorly located and maintained roads may contribute to impairment of water quality. Other contributors include industrial, agricultural, and silvicultural practices, land development, and other activities.

The Forest Service is responding to water quality concerns. Roads are stabilized and/or improved, and active gullies are treated. Some dispersed recreational sites within riparian areas within the Chattooga and Chauga River watersheds have been treated to reduce soil and

water impacts. Actively eroding gullies and galled barrens are stabilized or restored to conditions where they are vegetated and functioning within the acceptable range of desired conditions. All activities on the Sumter meet or exceed state requirements for Best Management Practices (BMP). Where BMP have not been formally identified, similar measures are applied to protect soil and water resources from unacceptable impacts associated with soil exposure and surface disturbance. Practices protect soil productivity and are consistent with soil quality monitoring direction. Watersheds with critical aquatic habitats, wild and scenic rivers, municipal water sources, and those on the state water quality impaired list will be given priority consideration for providing technical, cooperative, and financial assistance when conditions on private lands that prevent achieving desired conditions on the national forest.

The primary purpose of the channeled ephemeral stream zone is to maintain the ability of the land areas to filter sediment from upslope disturbances while achieving the goals of the adjacent management prescription area. In addition, the emphasis along ephemeral streams is to maintain stream stability and sediment controls by minimizing soil exposure or disturbance. See "Standard for Channeled Ephemeral Streams."

Productive soils are critical to the growth and health of fauna and flora. The soils on the Sumter National Forest vary from the piedmont and mountain topographic regions. The piedmont soils are formed from crystalline rocks, mixed acid rocks, micaceous rocks, and Carolina slates. The mountain soils are formed from colluvial materials weathered from gneiss, schist rock, and granite materials. The piedmont has 63 soil-mapping units and the mountains have 22 soil-mapping units. Mapping units have at least 50 percent of a primary soil series.

Soils of the piedmont include gently to steeply rolling hills, many of which have been severely eroded by past farming activities. Past degradation of many of these soils by erosion,

loss of infiltration capacity and depletion of nutrients has resulted in poor soil productivity (Hoover, 1949). Gullies formed in some areas. Some of this land that became the Sumter (Shands and Healy (1977). Some gullies, galls, and bare soil areas still exist on the Sumter and surrounding lands. Almost all of the piedmont surface soils have been eroded to some extent, averaging nearly a foot of surface soil lost, leaving fewer than 2 inches of soil surface on most of the landscapes. These areas require some type of treatment to improve soil productivity (McKee and Law, 1985). Efforts to reduce the effects of the gullies and severe erosion that began with the Civilian Conservation Corps in the 1930s were expanded in the 1980s and continue (Heede, 1976, Yoho, 1980, Schumm, et. al., 1984, Hansen, 1991, 1995, Hansen and Law, 1996).

Soil and water improvement measures are designed to address active severe erosion from gullies, abandoned roads, stream banks, or other sources. A combination of soil bioengineering, erosion control, stabilization and restoration measures appropriate for the landscape position result in a marked reduction in soil loss, erosion and sedimentation. Results improve poor or declining soil properties, water quality, watershed condition, riparian and/or aquatic habitats. Mitigation measures to limit the temporary effects of treatments are installed to produce rapid erosion control, permanent cover, and site recovery. Limiting sedimentation and improving soil properties are emphasized.

Cultivated or disked areas for wildlife openings or linear wildlife strips will prevent the concentrated flow, rill networks, erosion, and sedimentation. When necessary, alternating vegetated strips will be left on the contour to deter soil loss. Soil loss will be held to acceptable soil quality guides.

Active areas of ground disturbance will be limited in extent and duration within stream drainages to reduce the potential for direct, indirect, and cumulative effects caused by excessive changes in runoff, erosion,

streamflow, sediment, and channel adjustment due to soil disturbance and vegetation change.

Air quality is another important element to consider for healthy forest resources.. Sulfur compounds in the atmosphere are primarily responsible for the haze that obscures visibility. Sulfur compounds and sometimes nitrogen compounds can cause acidification of headwater streams and cause nutrients to leach out of soils. Ozone causes visible injury to plant leaves, and can also cause reduced plant growth. The pollutants originate from many sources over a wide geographic area. Therefore, regional approaches to air pollution emission reductions are necessary to improve air quality and resource conditions. It is essential that the Sumter work cooperatively with air management agencies and Regional Planning Organizations (VISTAS) to reduce air pollution impacts to resources, and to minimize the Sumter's impacts to air quality.

Goals and Objectives

Goal 1 Watersheds are managed (and where necessary restored) to provide resilient and stable conditions to ensure the quality and quantity of water necessary to protect ecological functions and support intended beneficial water uses.

Objective 1.01 Improve soil and water conditions on 1,500 acres through stabilization or rehabilitation of actively eroding areas such as gullies, barren areas, abandoned roads or trails, and unstable stream banks over the 10-year planning period.

Goal 2 Manage in-stream flows and water levels, by working with other agencies if possible, to protect stream processes, aquatic and riparian habitats and communities, and recreation and aesthetic values.

Objective 2.01 The in-stream flows needed to protect stream processes, aquatic and riparian habitats and

communities, and recreation and aesthetic values will be determined on 50 streams.

Goal 3 Riparian ecosystems, wetlands, and aquatic systems are managed (and where necessary restored) to protect and maintain their physical, chemical, and biological integrity.

Goal 4 Maintain or restore natural aquatic and riparian communities or habitat conditions in amounts, arrangements, and conditions to provide suitable habitats for riparian dependent and migratory species, especially aquatic species including fish, amphibians, and water birds within the planning area. Perennial and intermittent streams are managed in a manner that emphasizes and recruits large woody debris (LWD).

Objective 4.01 Create and maintain dense understory of native vegetation on 1 to 5 percent of the total riparian corridor acreage during the 10-year planning period.

Goal 5 Maintain or restore soil productivity and quality.

Objective 5.01 Improve soil productivity on 8,000 acres of disturbed, low productivity, eroded soils with loblolly and shortleaf pine on the piedmont during the 10-year planning period.

Goal 6 Cooperate with landowners and other partners to address watershed needs and participate in efforts to identify stream problems, watershed planning, BMP and Total Mean Daily Load (TMDL) implementation with the South Carolina Department of Health and Environmental Control, South Carolina Forestry Commission and other agencies.

Goal 7 Provide good air quality for people's health and the health of the forest environment.

Standards

Water and Soil Quality

FW-1 Water quality, soil productivity, and channel structure are protected using best management practices to avoid impacts to water quality and soils. Where riparian prescription direction differs from BMP, the more restrictive or protective prescription will be followed. Seed mixtures and the removal of large woody debris added by harvest activities suggested in the state BMP for Forestry may not be followed when they conflict with native vegetation and aquatic habitat objectives.

FW-2 Where BMP are not specifically developed for activities, apply similar preventive measures such as those published by the SC Forestry Commission concerning forestry which avoid, minimize and/or mitigate effects to water quality, streamside management zones and soils.

FW-3 Major soil disturbances that expose the soil surface or substantially alter soil properties such as temporary roads, skid trails, landings, and rutting will not occupy more than 15 percent of forest vegetation management treatment areas except for chopping, watershed improvements, or other treatments during a rotation designed to reforest to suitable species or correct soil and water problems.

FW-4 To limit soil and water quality impacts, heavy mechanical equipment (dozers, skidders, feller/bunchers, etc.) will not be used on slopes over 40 percent except in designated locations with adequate and timely mitigation. Emergency fire lines and soil and water improvements specifically designed to stabilize or rehabilitate severe erosion such as active gullies are exceptions to this slope limit.

FW-5 Water is not diverted from streams (perennial or intermittent) or lakes when an in-stream flow needs or water level assessment indicates the diversion would adversely affect

protection of stream processes, aquatic and riparian habitats and communities, or recreation and aesthetic values.

Channeled Ephemeral Stream Zones

The following standards apply to 25 feet on each side of a channeled ephemeral stream. See the Glossary, Appendix B, for a definition of a channeled ephemeral stream.

FW-6 Skidders will only be allowed within the channels at designated crossings.

FW-7 For cable logging, at least partial suspension is required when yarding logs over ephemeral streams.

FW-8 Skid trail crossings will be located in a manner that minimizes stream channel and bank disturbance.

FW-9 Fire lines are not constructed along the length of stream channels.

FW-10 New motorized trails are prohibited within ephemeral stream zones except at designated crossings or where the trail location requires some encroachment, for example, to accommodate steep terrain.

FW-11 Stabilize disturbed soils at channel crossings.

FW-12 New mineral, oil, and gas leases will contain a controlled surface use stipulation for channeled ephemeral stream zones.

FW-13 Removing large woody debris from within the channeled ephemeral stream zone is allowed if the woody debris poses a significant risk to stream flow or water quality, degrades habitat for riparian dependent species, or poses a threat to private property or National Forest infrastructure (e.g., bridges). The need for removal is determined on a case-by-case basis. When needed to protect water quality, excessive

small woody debris (logging slash) should be removed when its entry is a result of activities.

FW-14 Trees and native vegetation on the stream bank should not be removed except at designated crossings.

FW-15 Soil active herbicides are not broadcast within channeled ephemeral stream zones. Stream zones are identified before treatment, so applicators can easily avoid them.

FW-16 Pesticide mixing, loading, or cleaning areas are not located within the channeled ephemeral stream zone.

Air Quality

FW-17 Comply with South Carolina smoke management guidelines and Forest Service Region 8 smoke management guidelines.

Wildlife Habitat and Forest Vegetation

The Sumter National Forest lies within both the Blue Ridge and the piedmont physiographic provinces, where variations in elevation lead to differences in the vegetation that grows there. The Andrew Pickens Ranger District is located along the Blue Ridge. There is a mixture of shortleaf pine with various hardwoods on low elevation ridges and south-facing slopes. Pitch pine and table mountain pine are found on high ridges. Mesic oak-hickory forests are found on lower and north-facing slopes. Mixed mesophytic and white pine-hemlock forests are located in forested coves.

The Long Cane and Enoree Ranger Districts, in the piedmont, are predominantly loblolly pine forests interspersed with patches of upland hardwoods, including sweetgum, white oak, southern red oak, hickories, yellow-poplar, red maple, and various other oaks. Bottomland

hardwoods along streams dissect these upland forests.

Vegetation on the Sumter National Forest has been greatly modified by human activity over the last 200 years (Bates, 1993; Barden, 1997; Platt and Brantley, 1997; Frost, 2002). When the Sumter National Forest was established in 1936, it was comprised primarily of abandoned farmland. Early European explorers, beginning with Hernando DeSoto's 1540 expedition, found fire-maintained prairies, savannas, and woodlands in the uplands, created and maintained by the Native Americans who had occupied the land for at least 12,000 years. Shortleaf pine (*Pinus echinata*), warm-season grasses, and hardwoods dominated the uplands, and the bottomlands were mosaics dominated by bottomland hardwoods, loblolly pine (*Pinus taeda*), canebrakes, beaver ponds, beaver marshes, and successional thickets. Land clearing, and intensive cultivation, primarily in cotton, lasted from the late 1700s through the early 1900s followed by extensive planting of loblolly pine, initially by the Civilian Conservation Corps. During the 1960s, loblolly pine largely replaced the native shortleaf pine forests on the piedmont, since many of the existing shortleaf pine stands were susceptible to littleleaf disease, which is prevalent on severely eroded clay soils (Oak and Tainter, 1988). National forest management activities have perpetuated the loblolly pine forests we see today.

The Sumter National Forest is charged with creating and maintaining habitat conditions suitable to maintain viable populations of all species native to the planning area, and where appropriate support desirable levels of selected species. National Forest Management Act regulations, adopted in 1982, require selection of management indicator species (MIS) during development of forest plans (36 CFR 219.19(a)). Thirteen species have been selected as MIS for the Sumter National Forest. They will be used in

conjunction with other identified management indicators described in chapter 3 of the FEIS ("Biological Elements" section), and other Forest Plan monitoring items to assess effects of alternatives and to help monitor effects of implementing the selected alternative. The MIS selected and their related objectives can be found in Chapter 5.

As shown in Table 2-1, mixes of management prescriptions are allocated to provide for a variety of habitat conditions. The following goals, objectives and standards are designed to protect, restore, maintain, and enhance wildlife and plant populations and communities while maintaining flexibility to manage other resources.

Table 2-1. Forest Communities by District.

District	Forest Community	Condition	2002 Acres
Andrew Pickens (Mountains)	Dry-Mesic Oak	Forest	15,699
	Dry-Xeric Oak	Forest	1,702
		Woodland	-
	Dry, Dry-Mesic Oak and Oak-pine	Forest	9,955
		Woodland	-
	Dry, Dry-Mesic Pine and Pine-oak	Forest	28,428
		Woodland	-
Mixed Mesophytic Forest		20,663	
Loblolly Pine		6,936	
Enoree and Long Cane (Piedmont)	Dry - Mesic Oak	Forest	29,817
	Dry - Xeric Oak	Forest	1,723
		Woodland	-
	Dry, Dry-Mesic Oak and Oak-pine	Forest	2,239
		Woodland	-
	Loblolly Pine	Forest	211,585
		Woodland	-
Mixed Mesophytic Forest		1,824	
Bottomland, Riverfront Forest		28,875	

Goals and Objectives

Goal 8 Maintain and restore natural communities and habitats in amounts, arrangements, and conditions capable of supporting viable populations of existing native and desired non-native plants, aquatic, and wildlife species within the planning area.

Objective 8.01 Restore 2,000 – 6,000 acres of native communities on sites occupied by loblolly pine on the Andrew Pickens District over the 10-year planning period.

Objective 8.02 Provide 8,000 – 11,000 acres of woodlands in the piedmont and 4,000 – 5,000 acres of woodlands on the mountains on dry-xeric sites in woodland, savanna, open grassland, or shrubland conditions with fire associated rare communities preferred over the 10-year planning period.

Objective 8.03 Create conditions to restore dry-mesic oak, oak-pine, and pine-oak forest communities on 20,000 acres currently in loblolly pine in the piedmont over the 10-year planning period.

Objective 8.04 Increase shortleaf pine and shortleaf pine/oak communities on 2,000 to 10,000 in the piedmont. This will be done on sites with low risk of littleleaf disease.

Objective 8.05 Increase structural diversity by creating canopy gaps in 1 to 5 percent of closed canopy mid- and late-successional mesic deciduous forest (including mixed mesophytic and mesic oak forests). Gaps are defined as small openings smaller than 2 acres in size and are designated to release mast producing species, particularly hard mast (oak, hickory, walnuts, etc.) and soft mast

bearing trees (cherry, black gum, persimmon, etc.) over the 10-year planning period.

Objective 8.06 Restore more diverse native communities on 1,000 to 2,000 acres currently occupied by white pine stands. Prioritize xeric to intermediate sites over the 10-year planning period.

Goal 9 Provide habitats to sustain the diversity and distribution of resident reptile and amphibian species as well as breeding, wintering, and migration staging and stopover habitat for migratory birds in ways that contributes to their long-term conservation.

Objective 9.01 Construct or restore wetlands on 600 acres in the riparian corridor on the piedmont over the 10-year planning period.

Standards

FW-18 Standing snags, bird peck trees, and living den trees will not be cut or bulldozed during vegetation management treatments unrelated to timber regeneration treatments, unless necessary to provide for public or employee safety.

FW-19 Forests dominated by eastern hemlock are not subject to regeneration harvest during this planning period.

FW-20 During silvicultural treatments in all forest types, patches of hemlock greater than 0.25 acres are retained.

FW-21 Oak forests on mesic sites are not converted to pine forests.

FW-22 For all timber regeneration treatments, including salvage activities, two or more snags per acre from the larger size classes will be

retained. Live den trees will not be cut unless necessary to provide for public or employee safety. Distribution of retained snags may be clumped.

FW-23 On the Andrew Pickens, potential black bear den trees will be retained during all vegetation management treatments occurring in habitats suitable for bears. Potential den trees are those that are greater than 20" diameter at breast height (DBH) and are hollow with broken tops.

FW-24 In the piedmont, hardwood inclusions (1/2 acre in size or larger) in pine stands dominated by hard and soft mast producing trees (i.e., oaks, hickories, walnut, black gum, black cherry, persimmon) will be retained.

Proposed, Endangered, Threatened, Sensitive, (PETS) and Locally-rare species

The Sumter National Forest provides habitat for several federally proposed, endangered, or threatened species, Forest Service sensitive species (PETS), and locally rare species. The federally proposed, endangered, or threatened species listed in Table 2-2 were identified through coordination and consultation with the USDI Fish and Wildlife Service. See Appendix E of the FEIS ("Biological Assessment/ Biological Evaluation") for a complete listing of all PETS and their habitats, and Appendix F in the FEIS for a complete listing of all viability concern species and their habitats, including PETS and locally rare species.

Habitats for all PETS and locally rare species are provided through forest-wide goals, objectives, and standards recommended below, and emphasized in forest-wide, management prescription, and management area-wide direction associated with rare communities, riparian areas, and forest communities. The Sumter follows recovery plans for all federally-

endangered and threatened species, when available. All PETS receive additional consideration in biological evaluations/ assessments prepared during project-level planning.

Table 2-2. Federally Proposed, Endangered, or Threatened Species which occur or are likely to occur on the Sumter National Forest

Federally-listed Species	Status	District most likely to occur
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Threatened	Enoree and Long Cane
Carolina Heelsplitter (<i>Lasmigona decorata</i>)	Endangered	Long Cane
Florida Gooseberry (<i>Ribes echinellum</i>)	Threatened	Long Cane
Persistent Trillium (<i>Trillium persistens</i>)	Endangered	Andrew Pickens
Relict Trillium (<i>Trillium reliquum</i>)	Endangered	Long Cane
Small Whorled Pogonia (<i>Isotria medeoloides</i>)	Threatened	Andrew Pickens
Smooth Purple Coneflower (<i>Echinacea laevigata</i>)	Endangered	Andrew Pickens
Wood Stork (<i>Mycteria americana</i>)	Endangered	Enoree and Long Cane

Goals and Objectives

Goal 10 Contribute to the conservation and recovery of federally-listed species and take necessary actions to maintain viable populations of all species thereby avoiding the need to list those species.

Objective 10.01 Maintain or restore at least 8 self-sustaining populations for smooth coneflower and if possible, given the technical expertise 4 populations for small whorled pogonia on the Andrew Pickens, including the habitat to support them.

Objective 10.02 Maintain or restore at least 8 self-sustaining populations for Georgia aster (*Symphotrichum georgianum*) and 1 population for Florida gooseberry on the piedmont districts, and the habitat to support them.

Standards

FW-25 Permits for the collection of listed Regional Forester's sensitive species are not issued, except for approved scientific purposes or propagation.

FW-26 Where forest uses are negatively affecting federally-listed species, or species where viability is a concern, sites or uses are modified to reduce or eliminate negative impacts.

FW-27 Non-native species are controlled where they are causing adverse effects to federally-listed species, or species where viability is a concern. Non-native invasive species are not intentionally introduced near these species or individuals.

FW-28 Protection zones are delineated and maintained around all bald eagle nests and communal roost sites, until they are determined to be no longer suitable through coordination

with the U.S. Fish and Wildlife Service. The protection zone extends a minimum of 1,500 feet from the nest or roost. Activities that modify the forest canopy within this zone are prohibited. All management activities not associated with bald eagle management and monitoring are prohibited within this zone during periods of use (nesting season is October 1 to June 15; roost use periods are determined through site-specific monitoring). Where controlled by the Forest Service, public access routes into or through this zone are closed during the seasons of use, unless they are major arterial roads.

FW-29 In artificial impoundments used by foraging wood storks, water levels are managed to provide for and encourage annual use by this species.

Special Areas, Rare Communities And Old Growth

Special areas on the Sumter include those with botanical zoological characteristics, and scenic areas. Following an evaluation, special areas are allocated to specific prescriptions 4.D. (Botanical Zoological Area) and 4.F. (Scenic Area).

Rare communities are assemblages of plants and animals that occupy a small proportion of the landscape but contribute significantly to plant and animal diversity. The list of plant and animal communities considered rare within the southern Appalachian and piedmont forests undergoing forest plan revision were identified by the *Southern Appalachian Assessment* and refined using the International Classification of Ecological Communities (NatureServe, 2001). The following groups of rare communities are recognized as occurring on the Sumter National Forest.

- Bogs, Seeps, and Seasonal Ponds
- Riverine Vegetation
- Table Mountain Pine Forest and Woodlands

- Basic Mesic Forests
- Cliffs and Bluffs
- Rock Outcrops
- Glades, Barrens, and Associated Woodlands
- Canebrakes
- Mines

Conditions to promote old growth forest development are needed to address various social, biological, recreational, and spiritual issues in South Carolina. The forest will adhere to the "Guidance for Conserving and Restoring Old Growth Forest Communities on National Forests in the Southern Region" (1997), in defining old growth community types on the forest, and in describing inventory and monitoring needs. To date, few old growth inventories have been conducted on the Sumter, though very little existing old growth is thought to occur here, particularly on the piedmont districts (Jones, 1988; Carlson, 1995; White and Lloyd, 1998). Paul Carlson assessed the old growth forest resource on National Forest lands in the Chattooga watershed, and found 4 percent (of a total 122,000 acres) in existing old growth.

Consistent with the old growth guidance, a possible old growth inventory was developed for the Sumter National Forest in 1997, and rerun in 2002. It was considered in prescriptions allocation in this Forest Plan. This Forest Plan will provide conditions to develop a network of small, medium, and large patches of future old growth, through prescriptions which are "unsuitable for timber production," including wilderness, wild and scenic rivers, special areas, old growth, dispersed recreation (unsuitable), remote backcountry recreation, riparian corridors, and rare communities. Additional small patches of existing old growth (10-100 acres in size) will be identified through sitespecific surveys, and will be protected.

The old growth report contains operational definitions for 16 old growth community types, of which 8 occur or have the potential to occur on the Sumter National Forest, including the following:

- Conifer-Northern Hardwood Forest
- Mixed Mesophytic Forest
- River Floodplain Hardwood Forest
- Dry-Mesic Oak Forest
- Dry and Xeric Oak Forest, Woodland, and Savanna
- Xeric Pine and Pine-Oak Forest and Woodland
- Dry and Dry-Mesic Oak-Pine Forest
- Eastern Riverfront Forest

Goals and Objectives

Goal 11 Those areas with special scenic, botanical, and/or zoological characteristics will be managed to protect those characteristics.

Goal 12 Protect or restore the rare communities found on national forest lands.

Objective 12.01 Restore 500 to 2,500 acres of table mountain pine forest over the 10-year planning period.

Objective 12.02 In the piedmont, restore 1 to 5 percent of the riparian corridor on slopes less than 8 percent into the canebrake community over the 10-year planning period.

Goal 13 A variety of large, medium, and small old growth patches will be managed (through restoration, protection, or maintenance activities) to meet biological and social needs.

Standards

Rare Communities

FW-30 Rare communities as described in this Forest Plan are managed under the Rare Community Prescription (9.F.) wherever they occur.

FW-31 Project areas are surveyed for rare communities before implementing projects that have potential to adversely affect them.

FW-32 Table mountain pine will not be cut during vegetation management activities to maintain future restoration opportunities. Exceptions may be made where needed to provide for public safety, protection of private resources, or insect and disease control/prevention or where needed to improve the habitat for PETS species.

Old Growth

FW-33 Existing old growth as defined in "Old Growth Guidance for the Southern Region," when encountered, will be managed to protect the old growth characteristics.

Forest Health

Insect and disease organisms are important components of forest ecosystems. Native organisms contribute to many ecological processes of forests including nutrient cycling, plant succession, and forest dynamics. In most cases, these native organisms are recognized as an integral component of forest health. In a few instances, however, these organisms cause unacceptable resource damage or loss, and adversely affect ecological, economic, or social values. In these cases, the organisms causing the damage are referred to as pests. Principal native insect pests on the Sumter National Forest include the southern pine beetle and a variety of defoliators. Primary native disease problems include oak decline, annosum root disease, and a variety of other decay organisms affecting living trees.

Throughout the past 100 years, a variety of insects, diseases, and plant species have been introduced to the United States and spread into the Sumter National Forest. These non-native organisms are often pests because they often have no natural enemies or other naturally

controlling agent, and their unchecked spread can wreak untold damage to native ecosystems and forest communities. Chestnut blight has reduced the American chestnut from the dominant hardwood tree species in the mountains to a minor understory component of today's forests. Other important non-native pests include hemlock wooly adelgid, littleleaf disease, butternut canker, and dogwood anthracnose. Gypsy moth will probably reach the Sumter within the next few decades.

Non-native invasive plant species can spread into and persist in native plant communities and displace native plant species, posing a threat to the integrity of the natural plant communities. Some of the non-native invasive plants known to severely impact native plant diversity on the Sumter National Forest include Japanese and Chinese privet (*Ligustrum spp.*), kudzu (*Pueraria lobata*), sericea lespedeza (*Lespedeza cuneata*), Japanese honeysuckle (*Lonicera japonicum*), Chinese wisteria, (*Wisteria sinensis*), Japanese stiltgrass (*Microstegium vimineum*), tree of heaven (*Ailanthus altissima*), autumn olive (*Elaeagnus umbellata*), multiflora rose (*Rosa multiflora*), mimosa (*Albizia julibrissin*), and China Berry (*Melia azedarach*).

The high percentage of relatively older (age 70-120) forest communities in the mountains poses challenges in addressing forest health issues. These large areas of mature forests are particularly vulnerable to both native and non-native forest pests. Oak decline is a primary concern in mature oak forests. In the piedmont, the Sumter National Forest has large acreages of loblolly pine that are mature, making them more susceptible to littleleaf disease, and southern pine beetle.

In 2002, the Sumter experienced a southern pine beetle (SPB) epidemic, resulting in substantial mortality to pines. SPB infestations have grown especially fast in dense forests. Higher stand densities make pine stands much more susceptible to SPB attack. This fact points to the need for maintaining these stands at moderate densities.

Pitch pine (*Pinus rigida*), shortleaf pine (*Pinus echinata*), and table mountain pine (*Pinus pungens*) are declining in abundance throughout the southern Appalachian mountains because of age, southern pine beetle outbreaks, lack of fire, and limited amounts of disturbance.

Fire has historically played an important role in shaping the species composition of the Sumter National Forest. Historically, relatively frequent fires have maintained and restored many forested communities across the piedmont and southern Appalachians, especially xeric pine and pine-oak forest; dry and xeric oak forests; and dry and dry to mesic pine-oak forests. Without fire or other vegetation management actions that approximate fire's effects, many communities may show dramatic reductions in distribution and/or abundance in future years and shift towards shade-tolerant and fire-intolerant species. In the mountains, the absence of somewhat frequent fire has allowed fire dependent table mountain pine to shrink in distribution and is now considered a rare community.

Forests and streams located in areas of base-poor bedrock (sandstone and granite) and with elevations above 3,000 feet are being negatively affected by historical and current levels of acid deposition. The two primary acidifying compounds are sulfates and nitrates. The sources of acidifying compounds are generally located off national forest lands, with coal-fired electric generation facilities and vehicles accounting for the bulk of sulfur and nitrogen emissions. When nitrogen is deposited in excess of forest nutrient needs, some nitrate will leave the soil and take with it essential nutrients that impoverish the soil resource. When nutrients are leached from soils, growth of vegetation can be reduced. Sulfur deposition can cause the same effects on soils when the capacity to absorb sulfur is exceeded. Sulfur and nitrogen compounds in the soil also cause acidification of high elevation streams, which can alter the solubility, mobility and effect of aluminum and other chemicals, thereby endangering the habitat of native brook

trout and other aquatic species. Recent and projected trends in air pollutants show sulfur compound emissions decreasing over the life of the Forest Plan, whereas nitrogen compound emissions are projected to remain relatively flat.

Ozone pollution is negatively affecting the health of susceptible forest tree species, black cherry (*Prunus serotina*) for example. Ozone is formed through chemical reactions in the atmosphere between nitrogen oxide (from vehicles and coal fired power generation) and volatile organic compounds (from industrial and natural sources) in the presence of sunlight. Ozone levels are highest during the summer. Recent studies suggest that competitiveness between tree species is changing over time because of elevated ozone levels. Tree species that are not susceptible to ozone will out compete more sensitive species over time. Significant reductions in ozone pollution over the life of the Forest Plan are not anticipated because nitrogen oxide emissions are not expected to decrease significantly.

Integrated Pest Management (IPM) bridges several of the following forest health goals. IPM is the maintenance of destructive agents, including insects, at tolerable levels, by the planned use of a variety of preventive, suppressive, or regulatory tactics and strategies that are ecologically and economically efficient and socially acceptable. Within the constraints of Forest Plan standards and desired conditions, forest insects and diseases are controlled using IPM if necessary to prevent unacceptable damage to resources on adjacent land, or prevent unnatural loss to the forest resource or to protect threatened, endangered, and sensitive species

Goals and Objectives

Goal 14 Manage forest ecosystems and associated communities to maintain or restore composition, structure, function, and productivity over time.

Goal 15 Minimize adverse effects from non-native invasive species. Coordinate with private landowners and land managers as needed to address influx of non-native invasive species and treatments needed to protect the National Forest resources.

Objective 15.01 Control non-native invasive plants on, at a minimum, 1,000 acres by the end of the 10-year planning period, emphasizing management prescriptions where biodiversity or restoration is a primary objective.

Goal 16 Maintain or restore native tree species whose role in forest ecosystems is threatened by insects or disease.

Goal 17 Manage forest stands so they are less susceptible to insects and disease.

Objective 17.01 Improve forest health on 10,000 – 50,000 acres of pine forests by reducing stand density.

Standards

FW-34 Apply pesticides according to label instructions, Forest Service policies and other federal regulations.

FW-35 Areas treated with pesticide are signed.

FW-36 Seeding with invasive non-native species (listed on the Regional Forester's invasive species list) shall not be conducted.

FW-37 Healthy (full crowns and free of littleleaf disease) shortleaf pine will not be cut on the piedmont during vegetation management activities in order to maintain future restoration opportunities. Exceptions may be made where needed to provide for public safety, protection of private resources, or insect and disease control, or thinnings.

FW-38 To limit soil compaction, no mechanical equipment is used on plastic soils when the water table is within 12 inches of the surface, or when soil moisture exceeds the plastic limit. Soil moisture exceeds the plastic limit if the soil can be rolled to pencil size without breaking or crumbling.

FW-39 All trails, roads, ditches, and other improvements in the project area are kept free of logs, slash, and debris. Any road, trail, ditch, or other improvement damaged by operations is promptly repaired.

FW-40 Herbicides and application methods are chosen to minimize risk to human and wildlife health and the environment. No class B, C, or D chemical (defined in Glossary, Appendix B) may be used on any project, except with Regional Forester's approval. Approval will be granted only if a site-specific analysis shows that no other treatment would be effective and that all adverse health and environmental effects will be fully mitigated. Diesel oil will not be used as a carrier for herbicides, except as it may be a component of a formulated product when purchased from the manufacturer. Vegetable oils will be used as the carrier for herbicides when available and compatible with the application proposed.

FW-41 Areas are not burned under prescription for at least 30 days after herbicide treatment.

FW-42 Weather is monitored and the project is suspended if temperature, humidity, or wind becomes unfavorable as follows:

FW-43 Nozzles that produce large droplets (mean droplet size of 50 microns or larger) or streams of herbicide are used. Nozzles that

produce fine droplets (mean droplet size of less than 50 microns) are used only for hand treatment where distance from nozzle to target does not exceed 8 feet.

	Tempera- tures Higher Than	Humidity Less Than	Wind (at target) Greater Than
Ground:			
Hand (cut surface)	NA	NA	NA
Hand (other)	98°F	20%	15 mph
Mechanical:			
Liquid	95°F	30%	10 mph
Granular	NA	NA	10 mph
Aerial:			
Liquid	90°F	50%	5 mph
Granular	NA	NA	8 mph

FW-44 A certified pesticide applicator supervises each Forest Service application crew. Contracted crews will be supervised by a licensed pesticide applicator. Crewmembers are trained in personal safety, proper handling and application of herbicides, and proper disposal of empty containers.

FW-45 People living within ¼ mile of an area to be treated aerially are notified during project planning and shortly before treatment.

FW-46 With the exception of permittee treatment of right-of-way corridors that are continuous into or out of private land and through Forest Service managed areas, no herbicide is broadcast applied (as opposed to directed sprays) within 100 feet of private land or 300 feet of a private residence, unless the landowner agrees to closer treatment. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

FW-47 Application equipment, empty herbicide containers, clothes worn during treatment, and

skin are not cleaned in open water or wells. Mixing and cleaning water must come from a public water supply and be transported in separate labeled containers.

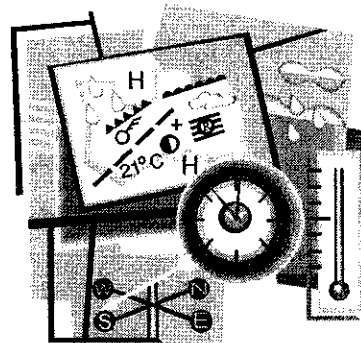
FW-48 Herbicide mixing, loading, or cleaning areas in the field are not located within 200 feet of private land, open water or wells, or other sensitive areas.

FW-49 No herbicide is aerially applied within 300 feet of any threatened, endangered, proposed, or sensitive plant. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

FW-50 No herbicide is aerially applied within 100 horizontal feet of lakes, wetlands, or perennial or intermittent springs and streams.

FW-51 No herbicide is aerially applied within 200 horizontal feet of an open road or a designated trail. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

FW-52 Pine straw or any other mulching material will not be sold (as mulch or for any other purpose) from areas treated with clopyralid.



Wood Products And Special Forest Products

Lands suitable for timber production provide a planned periodic harvest of wood products. Suitable lands are managed to influence tree species composition, control stocking, ensure adequate reforestation, harvest trees, and protect the productivity of the site while providing for a healthy vigorous forest within the growth capabilities of the sites. Maintaining a mix of successional habitats and/or a desired species composition is a primary objective for most of these lands on the Sumter National Forest.

Trees and the products derived from them are a highly valued forest resource, managed through a timber program for multiple-use objectives. Wood products contribute to the social and economic well being of the people living in the area. Forest products vary from high quality veneer for furniture and flooring to construction timbers to small diameter pulp logs used in the production of paper.

Lands not suitable for timber production may provide additional wood products. However, no yields of forest products are planned from these lands. Any such harvests are either driven by resource objectives other than forest products, or are a result of insect/disease control or salvage operations.

All of the acres in Table 2-3 are approximate. Management prescription 11 is estimated based on stream order, slope, and soil type. Actual area will be based on ground conditions. A map that accompanies this Forest Plan shows the allocation of management prescriptions on the Sumter.

The allowable sale quantity includes estimated timber volume from timber sales on lands suitable for timber production. The estimates are based on site quality, tree growth rates, habitat and environmental adjustments. When salvage occurs on these lands, the salvage volume is considered part of the allowable sale quantity. Salvage on lands unsuitable for timber production is not part of the allowable sale

quantity. The allowable sale quantity for the forest is 139 million cubic feet (MMCF) for all decades, or an average of 13.9 MMCF annually.

Management of the Sumter National Forest balances the ecological value of leaving dead, dying, and damaged trees as part of the ecosystem, with aesthetic desires, visitor safety, and the economic value of this resource for wood products if removed before deterioration. During southern pine beetle outbreaks, salvage harvest is an important tool for preventing further spread of infested spots. Only a relatively small portion of the mortality across the Sumter is removed through salvage operations with the remainder providing organic matter, nutrients, tree cavities, large woody debris, etc.

Appropriate regeneration methods are used to perpetuate desirable tree species. Decisions on specific harvest methods are based on site-specific project level analysis.

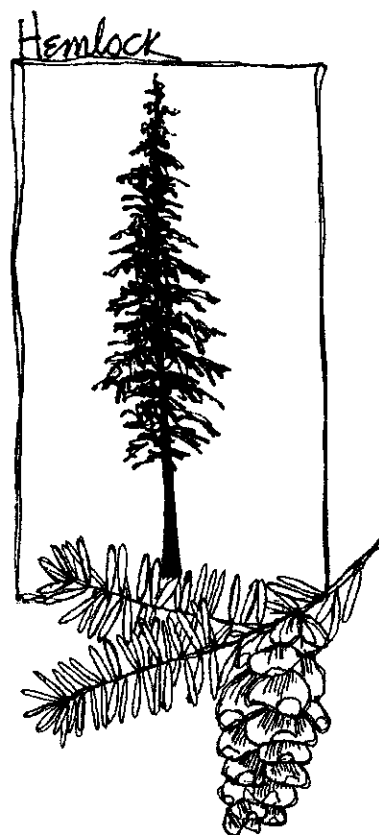


Table 2-3. Acres Suitable and Unsuitable for Timber Production

Management Prescription	Description	Acres Unsuitable for Timber Production	Acres Suitable for Timber Production	Total Acres
1A	Designated Wilderness	2,855		2,855
1B	Recommended Wilderness	1,971		1,971
2A1	Designated Wild River	3,290		3,290
2A2	Designated Scenic River	224		224
2A3	Designated Recreational River	977		977
4D	Botanical Zoological Areas	4,379		4,379
4F	Scenic Areas	9,979		9,979
4G1	Calhoun Experimental Forest	908	3,111	4,019
5A	Administrative Sites	285		285
5B	Communication Sites	4		4
5C	Utility Corridors	2,480		2,480
6C	Old Growth	1,620		1,620
7A	Scenic Byway	2,754		2,754
7D	Concentrated Recreation Zones	235		235
7E1	Dispersed Recreation Areas	6,545		6,545
7E2	Dispersed Recreation Areas		51,381	51,381
8A1	Mix of Successional Forest Habitats		35,232	35,232
8B2	Woodlands/Grasslands/Savannas		6,630	6,630
9A3	Watershed Restoration		9,646	9,646
9F	Rare Communities *	622		622
9G2	Restoration of Upland Oak-Hickory and Mixed Pine-Oak-Hickory Forests		36,448	36,448
10B	High Quality Forest Products		116,865	116,865
11	Riparian Corridors	55,563		55,563
12A	Remote Backcountry Recreation	4,413		4,413
	Water	1,761		1,761
	Non-forest outside of 5A, 5B and 5C	2,672		2,672
	Total	103,537	259,313	362,850

*This number will be refined with the implementation of site-specific inventories.

Goals and Objectives

Goal 18

Provide a sustainable supply of wood products.

Standards

FW-53 Special forest product collections are not allowed in botanical areas and rare communities, except for research or propagation.

FW-54 The maximum size of an opening created by even-aged or two-aged regeneration treatments is 80 acres for southern yellow pine and 40 acres for all other tree species. Exceptions to these acreage limitations may be permitted following review by the Regional Forester. These acreage limits do not apply to areas treated as a result of natural catastrophic conditions such as fire, insect or disease attack, or windstorm. Areas managed as permanent openings (e.g., meadows, pastures, food plots, rights-of-way, woodlands, savannas, and grasslands) are not subject to these standards and are not included in calculations of opening size, even when within or adjacent to created openings.

The 80-acre limit will not apply to the loblolly pine forest type on the Andrew Pickens Ranger District. These stands have a desired condition of more native species composition, and many are more than 80 acres with the largest stand being 290 acres. Leaving loblolly pine trees on site would provide an unwanted seed source and would work against restoration activities.

FW-55 An even-aged regeneration area will no longer be considered an opening when the certified reestablished stand has reached an age of 5 years.

FW-56 Regeneration harvest on lands suitable for timber production must be done under a regeneration harvest method where adequate stocking of desirable species is expected to occur within 5 years after the final harvest cut.

(Five years after final harvest means 5 years after clearcutting, 5 years after final overstory removal in shelterwood cutting, 5 years after the seed tree removal cut in seed tree cutting, or 5 years after selection cutting.) The new stand must meet the minimum stocking levels as described in Table 2-4. These standards apply to both artificial and natural means of stand regeneration. Where natural means are used and stand reestablishment has not been accomplished within 3 years after committing the stand to regeneration, the stand is re-examined for further treatment needs.

FW-57 Sell no more than 138.7 MMCF of chargeable timber from lands suitable for timber production during the 10-year planning period.

FW-58 No timber harvesting shall occur on lands classified as not suited for timber production except for salvage sales, harvest activities necessary to protect other multiple-use values, or harvest activities needed to meet other (non-timber) desired conditions of the management prescriptions established in this Forest Plan.

Table 2-4. Minimum stocking guides

Forest Type	Minimum Number of Seedlings for Adequate Stocking
Loblolly pine	200 per acre
Shortleaf pine/pitch pine	200 per acre
White pine	100 per acre (will occur in mixed stands with other pines or hardwoods)
Hardwoods	100 desirable trees per acre
Table mountain pine	100 per acre
Mixed stands (hardwood/pine or pine/hardwood)	100 per acre

Fire Management

Historically, fire may have been the most common form of natural disturbance on the landscape now managed as the Sumter National Forest. Fire has played an important role in developing and maintaining southern yellow pine ecosystems and appears to be a major factor in the developing oak forests. (Reference *Southern Appalachian Assessment* "Terrestrial Report" page 94-96). For additional discussion on fire's role in forest health, please refer to "Forest Health."

For purposes of fire management, ecosystems have been classified into five fire regimes.

- **Group 1**—(0 to 35 years) low severity.
- **Group 2**—(0 to 35 years) stand replacement severity.
- **Group 3**—(35 to 100+ years) mixed severity.
- **Group 4**—(35 to 100+ years) stand replacement severity.
- **Group 5**—(more than 200 years) stands replacement severity.

Fire regimes are generalized descriptions of the role fire plays in an ecosystem. (Discussion of fire regimes can be found in the *FEIS*, Chapter 3, "Prescribed and Wildland Fire.") The Sumter is dominated by fire-adapted and fire-dependent ecosystems characterized by short return interval understory fire regimes with low to moderate intensity ground fires that generally are non-lethal to the dominant trees.

Fire exclusion, primarily by suppression, disrupted the pattern of fire intensity and occurrence on the Sumter. The effect of the changes in the vegetation eventually leads to a regime shift on the continuum. Almost all significant forest health problems and many of the most destructive wildfires occur in these ecosystems, where fire has been excluded for prolonged periods and the natural fire regime has shifted. (Reference *Land Management Considerations in Fire Adapted Ecosystems: Conceptual Guidelines*. USDA Forest Service,

Fire and Aviation Management, Washington, DC. FS-590. August 1996.)

Three Condition Classes define the degree of departure from historical fire regimes, resulting in alteration of key ecosystem components. (Reference *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, 10-Year Comprehensive Strategy, Implementation Plan* May 2002.)

- **Condition Class 1:** Fire regimes in this fire condition class are within historical ranges. Vegetation composition and structure are intact. Fire dependent ecosystem components are maintained by desired fire regimes. Thus, the risk of losing key ecosystem components from the occurrence of wildland fire remains relatively low.
- **Condition Class 2:** Fire regimes on these lands have been moderately altered from their historical range. A moderate risk of losing key ecosystem components has been identified on these lands. Fire frequencies have departed by one or more return intervals. Vegetation composition has been moderately altered.
- **Condition Class 3:** Fire regimes on these lands have been significantly altered from their historical return interval. The risk of losing key ecosystem components from fire is high. Fire frequencies have departed from historical ranges by multiple return intervals. Vegetation composition, structure, and diversity have been significantly altered. Consequently, these lands verge on the greatest risk of ecological collapse.

The Sumter National Forest is characterized by short return-interval fire regime 1, and all three condition classes.

The hazardous fuels reduction program focuses on maintaining land in existing

condition class 1, and treating the fuels hazard in condition classes 2 and 3 to bring them into condition class 1. Priority is in the wildland urban interface (WUI), followed by maintaining and restoring fire adapted ecosystems. The current prescribed burning program for hazardous fuels and resource management treats about 20,000 acres annually. Approximately 18,000 acres of the average are burned for hazardous fuels reduction and 2,000 acres for other resource management. It is important for forest health, threatened and endangered species habitat, and reducing the risk in the wildland urban interface to maintain the forest currently in condition class 1 and restore as much of the condition class 2 and 3 to a lower class if possible.

Fire behavior and its effects vary within the Sumter National Forest. The piedmont is characterized by gentle rolling hills. Steeper, longer slopes characterize the mountains, and affect fire behavior and fire size more dramatically than the topography found in the piedmont. Consequently, the mountains have the potential for larger fires.

The Sumter National Forest suppresses an average of 30 wildland fires annually, which burn approximately 200 acres of National Forest land. Humans cause 94 percent of these fires: most are intentionally set or escaped debris burning. Lightning causes 6 percent of these fires. Most fires, 86 percent, are 10 acres or fewer.

The Sumter may expect 40 to 50 days of high fire danger and 1 day of very high to extreme fire danger, annually. Most fires occur during the high fire danger periods with flame lengths of 3-5 feet. Severe and extreme droughts occur periodically, usually beginning in the spring and may continue through November. During these periods the Keetch-Byrum Drought Index (KBDI) may reach 700+. In the past 25 years, the Sumter has had 17 escaped fires (over 100 acres), an annual escape fire frequency of 0.68 and an average of 234 acres burned per year.

Major factors affecting forest fuels are dominant vegetation type and age (overstory,

midstory and ground cover), and the presence of insects and disease. Regeneration harvests over the past 20 years have resulted in a mosaic of 0 to 20 year-old pine stands. Fires starting in reproduction stands are harder to suppress than fire in open stands with light fuels. These stands have a greater potential of increased mortality to the overstory with increased potential for stand replacement fires. A recent infestation of the southern pine beetle has dramatically increased the amount of fuel present, both on the ground and standing. Treatments include salvage sales in the piedmont and cut-and-leave activities in the mountains and piedmont. Both types of treatment will increase hazardous fuels on the ground, and add complexity and hazard to suppression efforts and wildland fire use.

Much of the Sumter is in dispersed ownership and can be classified as wildland urban interface. This wildland urban interface places the private structures at increased risk from wildland fires and vice versa. If fire is excluded from these areas, fuel loadings will increase, resulting in increasingly greater risk for larger and more intense fires. The hazardous fuels reduction program strives to reduce this risk.

The National Fire Plan – A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan established four goals for Forest Service Fire Management (and other federal and state agencies). These goals provide the framework for developing the Sumter's fire management program. These four goals follow.

1. Improve Fire Prevention and Suppression
2. Reduce Hazardous Fuels
3. Restore Fire-Adapted Ecosystems
4. Promote Community Assistance

The appropriate management response will be used for suppression strategies. These strategies range from direct attack to minimizing acreage burned and resource value loss, to

indirect attack where firefighter and public safety is always the primary consideration. (Reference "Federal Wildland and Prescribed Fire Management Policy" 1995, and amendments.)

The "Fire Management Plan" (FMP), a strategic document based on and in support of this Forest Plan, provides comprehensive guidelines for both the suppression and the prescribed fire programs in relation to other management activities and geographic areas on the Sumter. The "Fire Management Plan" does not document fire management decisions; rather it provides the operational parameters whereby fire managers implement the goals and objectives in the Forest Plan or land management decisions." (FSH 31 5109.19 CH 50, 52.1)

Goals and Objectives

Goal 19 Protect life, property, and resources from unacceptable damage by fire through improved fire prevention, suppression, hazardous fuel reduction, and promoting community assistance.

Goal 20 Maintain and restore fire-adapted ecosystems by reducing hazardous fuels through the use of prescribed fire and mechanical fuels treatments.

Objective 20.01 Maintain condition class I by restoring historic fire return intervals and reducing the risk of losing ecosystem components to wildfire on approximately 250,000 acres over the 10-year planning period.

Goal 21 Emissions from prescribed fire will not hinder the state's progress toward attaining air quality standards and visibility goals.

Standards

Wildland Fire

FW-59 The safety of firefighters and the public is the first priority in all fire management activities.

FW-60 Suppress human-caused fires.

FW-61 Wildland fire use, the management of naturally ignited wildland fire, is allowed with an approved "Fire Management Plan" and a specific "Wildland Fire Implementation Plan" for the area.

FW-62 Wildland fire use of naturally-ignited wildland fire in wilderness is allowed with an approved "Fire Management Plan," a "Wilderness Fire Plan," and a specific "Wildland Fire Implementation Plan" for the area.

Prescribed Fire

FW-63 Prescribed fires will be implemented following the direction found in FSM 5140.

FW-64 Prescribed burns are done so they do not consume all litter and duff and/or alter structure and color of mineral soil on more than 15 percent of the area.

FW-65 On severely eroded forest soils, any area with an average litter-duff depth of less than ½ inch or duff less than ¼ inch will only be burned at low intensity.

FW-66 Use existing barriers, e.g., streams, lakes, wetlands, roads, and trails, whenever possible to reduce the need for fire line construction and to minimize resource impacts.

FW-67 All managed burns will comply with Smoke Management Programs (SMP) for South Carolina.

FW-68 Conform with the "State Implementation Plan" for any prescribed fire planned within EPA-designated "non-attainment" and "maintenance" areas.

Recreation—Developed, Dispersed, and Backcountry

The Sumter National Forest consists of three ranger districts, the Andrew Pickens, Enoree, and Long Cane. Each district is unique in its recreational offering as well as its landscape.

The Andrew Pickens Ranger District (85,500 acres) is located in the northwest corner of the state, bordering both North Carolina and Georgia. The district is also rural in nature. Apple orchards and small residential complexes are common sights. The district's land base is much more consolidated than either the Enoree or Long Cane Ranger Districts. National forest land dominates the landscape with some occasional private lands. The recreational resources include developed campgrounds, primitive/seasonal camps, several types of trails, including the Chattooga Wild and Scenic River, a rifle range, hunting and fishing opportunities. Hotspots on this district include the recreational use associated with the Chattooga Wild and Scenic River. The river is one of the main attractions of this area and people flock to see it. River boating approaches 100,000 per year. There is one state park within the forest's boundaries, Oconee State Park. Another large state park, Devils Fork State Park is located just a few miles to the east of the forest. This district is located on the state line for North Carolina, South Carolina and Georgia and borders both the Chattahoochee and the Nantahala National Forests. These national forests also provide recreational settings and opportunities that affect supply in the area.

The Enoree Ranger District (161,500 acres) is located in central South Carolina, between Spartanburg and Columbia. The district has a very rural setting with National Forest lands

interspersed with pastured lands, croplands, industrial timberlands, and small communities. National forest lands in this area are not consolidated and often are adjacent to private lands. The recreational resources include campgrounds and primitive camps, rifle ranges, trails for a variety of uses, interpretive opportunities, hunting and several recreational fishing lakes. The statewide Palmetto Trail will cross this district when completed. Rose Hill State Park, a historic state park, is located in the middle of the district. An emphasis of this district is a premier network of trails for riding OHVs, horses, mountain bikes, and hiking, as well as abundant opportunities for hunting and wildlife viewing.

The Long Cane Ranger District (117,500 acres) is located on the western edge of the state, near Abbeville, Edgefield and North Augusta. The district also has a rural setting and an unconsolidated land base. Small towns and communities dot the landscape. Forested lands, pastures and private residences and industrial timberland coexist. The recreational resources on this district include developed campgrounds, primitive/seasonal camps, rifle ranges, trails for a variety of uses, interpretive opportunities, hunting, and fishing opportunities. There are several state parks located within the forest boundaries, including Baker Creek State Park, Hamilton Branch State Park, and Hickory Knob State Park. Also, there are several Corps of Engineer projects along the Strom Thurmond Lake, which borders the Long Cane to the west. A state scenic highway (state highway 28/81) runs through the district. Also, a National Heritage Corridor also runs through the district. An emphasis of this district is a premier network of trails for hiking and riding OHVs, horses, mountain bikes, as well as abundant opportunities for hunting and wildlife viewing.

Although the opportunities for outdoor recreation are extensive and the public demand for these opportunities is seemingly endless, the Sumter's capability to meet these demands is not endless. Visitor preferences can shift over time. Both changing financial limitations and

environmental impacts must be considered. In order to maximize value to the public with the limited resources available, the forest will focus on providing those opportunities that are unique or of exceptional long-term value in a manner that focuses on maximizing visitor satisfaction within financial and environmental limitations.

Goals and Objectives

Goal 22 Provide a spectrum of high quality nature-based recreational settings and opportunities that reflect the unique or exceptional resources of the Sumter and the interests of the recreating public on an environmentally sound and financially sustainable basis. Adapt management of recreation facilities and opportunities as needed to shift limited resources to those opportunities.

Goal 23 Where financially and environmentally feasible, enhance the following opportunities:

- Hiking, biking, canoe, kayak, raft and equestrian trail systems, especially in non-motorized settings with high quality landscapes
- Designated OHV routes
- The high priority improvements, expansions, or additions of facilities to provide developed recreational opportunities
- Hunting, fishing, wildlife, bird, and plant viewing opportunities
- Educational and interpretive opportunities

Objective 23.01 Maintain or improve 150 acres of ponds/lake habitat for recreational fisheries.

Objective 23.02 In the piedmont, increase acreage that is at least ½ mile from an open road to 35,000 acres, emphasizing land blocks that are at least 2,500 contiguous acres in size.

Goal 24 Enhance opportunities to provide backcountry (semi-primitive motorized and non-motorized/remote) recreational experiences that are generally not available on other land ownerships.

Goal 25 Provide a range of accessible recreation facilities and trails.

Standards

General

FW-69 Limit OHVs and mountain bikes to designated routes.

FW-70 Prohibit camping stays over 14 days, unless permitted.

FW-71 No new OHV routes in the Turkey, Stevens, Chauga and Chattooga Watersheds.

FW-72 Dispersed camping is not allowed on the Enoree and Long Cane ranger districts without a permit.

FW-73 Motorized use of the trail system is permissible for administrative purposes and emergencies.

FW-74 All management activities will be consistent with meeting or exceeding the condition associated with each Recreation Opportunity Spectrum (ROS) class.

FW-75 At developed recreational sites and on trails, effects from recreational use that conflicts with environmental laws (such as Endangered Species Act, National Heritage Preservation Act, or Clean Water Act), are analyzed and mitigated.

FW-76 At developed recreational sites, water, wastewater, and sewage treatment systems meet federal, state and local water quality regulations.

FW-77 At developed recreation sites high-risk conditions do not exist.

FW-78 At developed recreation sites, utility inspections meet federal, state and local requirements

FW-79 When signed as accessible, constructed features meet current accessibility guidelines.

FW-80 Trails, when signed accessible, meet current accessibility guidelines.

FW-81 Dispersed camping occurs at least 50 feet from lakes and streams to protect riparian areas, 50 feet from trails, and 1/4 mile from a road on the Andrews Pickens district.

FW-82 Camping with horses may only occur in designated areas on the Andrew Pickens District.

Roadless Areas and Wilderness Management

Congressionally designated wilderness areas are protected by law and valued for their ecological, historical, scientific, and experiential resources.

There is one designated wilderness area on the Sumter National Forest. Ellicott Rock Wilderness is shared between three national forests, the Sumter, the Nantahala and the Chattahoochee. Of the combined 8,271 acres for the entire wilderness area, 2,856 acres are on the Sumter. This acreage represents less than 1 percent of the total forest acreage. The existing wilderness areas will be managed to maintain the area's natural characteristics. Natural occurrences such as outbreaks of insects or disease are allowed as part of the natural cycle. Man-caused intrusions are not allowed. Under emergency conditions, mechanical equipment and motorized transport may be approved for use to control fire, which threatens life, property, or the wilderness resource. The Sumter National

Forest contains one recommended wilderness study area that has not been acted upon by Congress, Ellicott Rock Extension (1,982 acres.)

The Sumter National Forest has 4 inventoried roadless areas, totaling approximately 6,161 acres. One of the areas is shared with the Chattahoochee National Forest.

Air pollution emitted within or near the Sumter can be transported and transformed over long distances. The impacts from secondary pollutants on natural resources can be found downwind of where the air pollution is emitted. There are four areas within 200 km of the Sumter that are designated as class I air quality according to the Clean Air Act Amendments of 1977. Three of these class I areas (Linville Gorge, Joyce Kilmer/Slickrock, and Shining Rock Wilderness) are under the responsibility of the USDA Forest Service on other national forests. The forests managing Class I wilderness have a legal responsibility to advise the state environmental agencies if any new or modified source of air pollution originating within the state will have an adverse impact to the air quality related values (AQRV) of the nearby class I areas.

Goals and Objectives

Goal 26 Maintain wilderness, wilderness study areas, and inventoried roadless area characteristics.

Goal 27 Manage wilderness, wilderness study areas, and inventoried roadless areas to provide the social and ecological benefits that only they can offer.

Wild and Scenic Rivers

Chattooga Wild and Scenic River

The Sumter National Forest has one designated Wild and Scenic River. On May 10, 1974, the Chattooga River was added to the National Wild and Scenic Rivers System. It is one of the premier whitewater streams of the eastern United States. Its 57 designated miles begin in the National Forests of North Carolina and forms the state boundary between South Carolina (Sumter National Forest) and Georgia (Chattahoochee National Forest). The Sumter National Forest has the lead authority for all boating/floating use (commercially-guided and self-guided) on the Chattooga River when it involves the main channel from Burrell's Ford to Lake Tugaloo, as well as the West Fork in Georgia. The respective forests where these uses occur administer all other land and water uses.

The Chattooga River has several outstandingly remarkable values including geology, biology, scenery, recreation and history.

The Chattooga River corridor has a variety of recreational activities from hiking and equestrian use to nature study, backpacking, and fishing. Floating use, both guided and self-guided, fluctuates each year based on water levels. In years of high water levels, the use for both guided and self-guided has reached as high as 89,000 people per year. In years of lower water levels the number can be significantly lower. Specific management direction can be found in Management Prescription 2A in Chapter 3.

Eligible Rivers

During the current forest plan development, rivers on the Sumter National Forest were considered for potential inclusion in the National Wild and Scenic Rivers System based on the requirements of Section 5(d)(1) of the Wild and Scenic Rivers Act. The forest evaluated the eligibility of five rivers and found only the

Chauga River as eligible. This river was placed in a scenic area prescription to protect the free-flowing condition and outstandingly remarkable values.

In 1995 a comprehensive inventory was done. This inventory included rivers identified on the Nationwide Rivers Inventory, the South Carolina Statewide River Assessment, and by public involvement and information gathered by Forest Service personnel. Seventeen streams or rivers on the Sumter National Forest were reviewed for potential eligibility. Of the 17, eight were found to be free-flowing and possess one or more outstandingly remarkable values.

These streams were classified according to Section 2 of the Wild and Scenic Rivers Act (WSR) (PL 90-542). Table 2-5 shows the rivers that were studied and found ineligible and Table

Table 2-5 Rivers Studied for National Wild and Scenic River System and found Ineligible

District	River	Miles
Andrew Pickens	Limber Pole Creek	2.0
	King Creek	3.2
	Crooked Creek	1.3
Enoree	Broad River	37.0
	Tyger River	30.2
	Enoree River	36.7
	Fairforest Creek	9.6
Long Cane	Little River	6.2
	Long Cane Creek	29.2

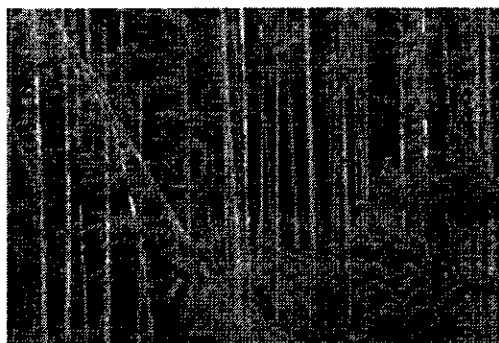


Table 2-6 Rivers Studied for Inclusion as National Wild and Scenic River and found Eligible

District	River	Segment	Miles	Outstandingly Remarkable Value(s)	Classification
Andrew Pickens	Brasstown Creek	N/A	3.9	Botanical/Ecological	Wild
	Cedar Creek	N/A	4.2	Botanical/Ecological	Scenic
	Chauga	I	7.9	Scenic Recreation Geologic Botanical/Ecological	Scenic
		II	4.1	Scenic Recreation Geologic Botanical/Ecological	Wild
		III	4.0	Scenic Recreation Geologic Botanical/Ecological	Scenic
	Crane	N/A	3.1	Fish/Aquatic	Scenic
	East Fork, Chattooga River	I	2.5	Fish/Aquatic	Recreational
		II	2.2	Fish/Aquatic	Wild
		III	.2	Fish/Aquatic Recreation	Recreational
		IV	2.4	Fish/Aquatic Recreation Botanical/Ecological	Wild
	Tamassee Creek	N/A	1.7	Botanical/Ecological	Wild
Long Cane	Turkey	N/A	12.5	Wildlife Fish/Aquatic Botanical Ecological	Scenic
	Stevens	N/A	13.4	Wildlife Botanical/Ecological	Recreational

2-6 shows the rivers that were studied and found eligible.

Management direction for the eligible rivers is not in separate management prescriptions but is governed by the following forest-wide direction. An explanation of the Wild and Scenic River study process can be found in Appendix D of the FEIS. A map of the eligible rivers can be found in Appendix I.

Goals and Objectives

Goal 28 The Chattooga Wild and Scenic River would be managed to protect and enhance free-flow, water quality and the outstandingly remarkable values of geology, biology, scenery, recreation and history.

Goal 29 Eligible rivers will be managed to protect free-flow, protect and to the extent possible enhance outstandingly remarkable values, and maintain the identified wild, scenic, or recreational classification.

Objective 29.01 A suitability analysis for Turkey and Stevens Creek will be completed by the year 2009.

Standards

Eligible Rivers

The following standards apply to ¼ mile on each side of the eligible rivers shown in Table 2-6.

FW-83 No new road construction in wild sections.

FW-84 No motorized boats or crafts are allowed on the wild sections.

FW-85 No motorized trails are allowed.

FW-86 No federal mineral leasing or mineral material authorization is permitted.

FW-87 New utility corridors or communications/electronic sites will be discouraged.

FW-88 Protect the outstandingly remarkable values and maintain the identified wild, scenic or recreational classification.

Aesthetics/Scenery Management

Public concern for the quality of scenery in National Forest System lands in the Blue Ridge and piedmont regions is increasing. Many sightseers visit the national forest as part of an interwoven experience with other tourist opportunities. The Sumter National Forest provides opportunities for high quality nature-related sightseeing and scenic viewing. Scenic features include the Chattooga Wild and Scenic River, a Congressionally-designated wilderness area, the Oscar Wigginton National Forest Scenic Byway. The Sumter National Forest also, offers premier opportunities for wildlife viewing and driving for pleasure.

These highly visible lands, including those adjacent to heavily used waterways, major forest trails, scenic road corridors and major highways through the forests, present challenges to land managers. Potential conflicts could arise between scenery management and other resource objectives. The visual resource has been inventoried and classified in an effort to arrive at management solutions that include the scenic resource. A visual inventory was mapped on Sumter lands using the Scenery Management System (SMS). This system increases the role of constituents throughout the inventory and planning process. It borrows from and is integrated with basic concepts and terminology of ecosystem management. The system provides for improved integration of aesthetics with other biological, physical, and social/cultural resources in the planning process.

Goals and Objectives

Goal 30 Protect and enhance the scenic and aesthetic values of the national forest lands in the Southern Appalachians and piedmont.

Standards

FW-89 The Forest Scenic Integrity Objectives Maps and Scenic Integrity Objectives (SIO) in each prescription governs all new projects (including special uses). Assigned SIO are consistent with Recreation Opportunity Spectrum management direction. Existing conditions may not meet the assigned SIO.

FW-90 The Scenery Management System guides protection and enhancement of scenery on the Sumter National Forest. The scenic class inventory will be maintained, refined, and updated as a result of site-specific project analysis. The standards under each Management Prescription in Chapter 3 refer to the inventory as updated.

FW-91 Lands mapped as concern level 1 middle ground from travel ways and use areas will be inventoried as Scenic Class 2 or higher and will be managed for an SIO of Moderate or higher.

Heritage Resources

Awaiting discovery in the woodlands of the Sumter National Forest are the remnants of past cultures that confront us and remind us of the centuries-old relationship between people and the land. These heritage resources hold clues to past ecosystems, add richness and depth to our landscapes, help us to understand past life-ways, provide links to living traditions, and help transform a walk in the woods into an unforgettable encounter with history.

More than 10,000 years ago American Indians first occupied the area of South Carolina that is now part of the Sumter National Forest. Historic period Indians included groups with social and political ties to the Cherokee and the Catawba. Archeological and historical research has been used to reconstruct and interpret both Native American prehistory and the advance of Euro-American settlement into the upstate of South Carolina beginning in the eighteenth century. Land acquisition for a national forest in South Carolina began as early as 1914 in Oconee County as part of the Nantahala National Forest. However, most of the land acquired to form the national forest in the piedmont was purchased from willing sellers between 1934 and 1936. Together these public lands became the Sumter National Forest.

More than 3,800 heritage resource sites are recorded on the Sumter National Forest. Prehistoric period sites include campsites, villages, hunting areas, stone tool quarrying areas, and petroglyphs. Historic period sites include farm houses, outbuildings, mines, improved springs, dams, mills, quarries, cemeteries, churches, Revolutionary War battlefields, pottery and lime kilns, bridges, Civilian Conservation Corp camps, World War II Prisoner of War camps, and fire lookout towers. A network of old Indian trails, railroad beds, and abandoned roadbeds can be found on the forest.

Heritage resources are nonrenewable and the purpose of the heritage management is to protect significant heritage resources. The Forest Service seeks to improve public understanding of our heritage, to raise public awareness of the fragile and irreplaceable nature of heritage resources, to share its values with the forest visitor, to contribute relevant information and perspectives to forest management, and to provide enhanced public recreational opportunities.

Heritage resources are an essential component of ecosystem analysis and forest health assessments providing the link that connects people, past, and present to the land. They also provide a context for understanding

contemporary landscapes and natural resource issues.

The Forest Plan for heritage resources takes its cue from the Forest Service's National Heritage Strategy; a strategic plan that articulates the role the heritage program can play in achieving the overall mission and vision of the Forest Service. It seeks to clarify and define the program in terms of three key components: stewardship, public service, and a context for natural resource management.

Goals and Objectives

Goal 31 Manage areas with special paleontological, cultural, or heritage characteristics to maintain or restore those characteristics.

Goal 32 Meet the demand for quality heritage learning and tourism opportunities. Realize the potential of heritage sites on the national forest to draw heritage tourism partners to benefit both the heritage assets and public programs.

Standards

FW-92 Significant sites are evaluated for eligibility to the *National Register of Historic Places* and are submitted to the State Historic Preservation Office for review.

FW-93 Projects are designed to avoid, minimize, or mitigate negative effects on potentially significant heritage resources. In-place protection of identified sites is the minimum requirement until site significance is determined.

FW-94 If cultural resources are encountered, regardless of whether the area has been previously disturbed, halt activities until the site significance is determined

Minerals and Geology

The United States holds title of nearly all of the mineral rights beneath the surface of the Sumter. Forest tract L-446, containing 358 acres, is the only tract on the Sumter where the United States does not own the mineral rights. The right of development of private mineral rights will be allowed subject to the terms of the deed which severed the mineral estate from the surface estate and the applicable state and federal laws. There are no active mines on the Sumter at this time. The "Plan of Operations for a Preference Right Lease Application for Gold" has been approved for 1,100 acres on the Long Cane District. A "Prospecting Permit Plan of Operations" has been approved on the Long Cane District and a Prospecting Permit Application has been received for 200 acres on the Long Cane District.

Congress has passed various laws providing for the exploration and development of mineral resources on National Forest System lands. Federal mineral resources are classified into three types: 1) locatable minerals, 2) leasable minerals, and 3) salable (common variety) minerals. Locatable mineral exploration and development is authorized by the 1872 Mining Act, which applies to Public Domain status lands. The Sumter has no public domain status lands; therefore, the locatable mineral program does not apply. However, locatable minerals (e.g., gold, silver, lead, iron, copper, etc.) become leasable on acquired status lands. All federal lands in the state of South Carolina have been acquired. Leasable minerals are managed in cooperation with the U.S. Department of Interior, Bureau of Land Management (BLM). The BLM is the federal agency that issues all mineral leases. Leasable minerals include the "locatable" minerals that occur on acquired status lands, the energy minerals (e.g., coal, oil, gas, geothermal, oil shale) and phosphate, sodium and potassium. Salable minerals (e.g., sand, gravel, pumice, clay, stone, riprap) are managed solely by the Forest Service on National Forest System lands.

Goals and Objectives

Goal 33 Mineral resources will be managed to meet demands for energy and non-energy minerals consistent with Forest Plan management prescriptions.

Standards

FW-95 Common variety mineral permits (individual sales and free use permits) involving more than casual use amounts (1 ton) or occurring in a sensitive area such as near streams or rare communities will have an approved mining and reclamation plan.

Access and Road Management

The transportation system provides public access and facilitates Forest use and management activities. The system is facing increased use with a declining road budget and a large backlog of deferred maintenance work. The increasing urban activities along and into the forest boundary are creating new demands on the road system. Most of the roads have existed for 25 years or more. Many of the system roads were not designed to handle these new demands of traffic mix and volume.

The Sumter road system includes 2,640.6 miles of road. This system includes the State, county, and National Forest System roads. The National Forest system roads have recently been divided into public and administrative road categories. The administrative roads are generally for administration of the national forest lands and resources and are not classified as public roads. However, the Secretary of Agriculture allows public use if the road is open to traffic. The designated public roads are generally open and can be traveled by car.

National Forest system roads currently total 1,052.9 miles. These system roads are divided into three functional classes: arterial, collector, and local. The roads are operated under road management objectives to minimize resource-

use conflicts. These conflicts may include mixed vehicle use, wildlife considerations, and water quality concerns. Refer to Chapter 3 of the *FEIS* for miles of road by functional class.

Forest highways are specially designated routes maintained by a public road agency that is of special importance to the forest. These roads may be partially funded under the Federal Lands Highway program. The forest works with the state transportation department on the designation and management of these roads. The forest currently has 412.64 miles of designated forest highways.

National Forest System roads are divided into five levels for maintenance purposes. Roads requiring only custodial care, such as long-term closures, are level 1. Very low standard roads permitting limited passage of high clearance vehicles are level 2. Roads maintained for safe and moderately convenient travel suitable for passenger cars are level 3. Roads with higher average daily traffic and generally a through route are level 4. Arterial roads and routes into special locations, such as recreation campgrounds, are level 5. User comfort and driving ease are increasingly important considerations from level 3 to level 5. About 57.9 percent of the Sumter is in the level 3 to level 5 classes, and 38 percent of forest roads are in class 1, generally closed.

The forest handles nearly all maintenance activities with service or construction contracts. The Sumter road maintenance contracts for the last few years have had to reduce the mileage maintained because of decreased funding. The forest road condition survey program has identified over \$27 million in deferred maintenance work on the road system.

Road management objectives will be reviewed for existing roads and proposed new roads through area analysis, watershed level analysis, and site-specific project analysis. These analyses will be aided by the use of a Road Analysis Process (RAP) to assist the forest in making road decisions including identifying any unclassified roads and deciding whether to add them to the system or re-vegetate them so they

can revert back into forest management. Timber sales will generally use existing roads or temporary roads. New road construction for timber sales will be less than in the past. The forest will have nearly 17,000 acres where no new roads will be allowed and nearly 138,000 acres where the open road mileage may decrease over the planning period. The forest will move to more cooperation with the counties in road maintenance especially for roads serving a large number of private residences or needed for school bus access or other community reasons. Key roads identified in the public roads program will be upgraded as funds become available to improve the public's access and safety.

Goals and Objectives

Goal 34 Provide a minimum transportation system that supplies safe and efficient access for forest users while protecting forest resources.

Goal 35 Improve conditions of needed roads that are adversely affecting soil and water resources.

Standards

FW-96 Establish and maintain vegetation, preferably native to the ecotype, on roadbeds, cut slopes, and fill slopes of intermittent service roads when they are closed. Annuals may be used to provide temporary soil cover until natives can take over.

FW-97 Constructed transportation routes inventoried in the Forest Transportation System (roads and trails) should remain opened for public travel unless any of the following occurs:

1. the road is unsafe for motorized public travel;
2. there is unacceptable resource damage;
3. closures or restrictions are needed to meet other resource needs;

4. cost to maintain is unacceptable/impractical;
5. the road is determined unneeded for resource management or public access.

Lands and Special Uses

The Sumter National Forest has an active land adjustment program. A Land Ownership Adjustment Strategy (LOAS) will provide guidance to the land adjustment program and identify the optimum desired future land ownership pattern to provide for resource use and protection to meet public needs.

Consolidation of National Forest System lands is an important objective of the land ownership adjustment program. Land adjustments have been accomplished primarily through land exchanges and purchases. Between 1992 and 2002, four land exchanges have been completed resulting in the acquisition of 2,101 acres and the conveyance of 885 acres, or a net gain of 1,216 acres. During the same time period, eleven purchases totaling 5,420 acres have been completed using Land and Water Conservation Funds (LWCF). Purchases depend entirely on available LWCF funding for a given year. The purchase program is expected to increase as the public becomes more aware and supportive of protecting important lands within national forest boundaries. The LOAS will assist in identifying land purchase and exchange opportunities, and define criteria for prioritization of lands for acquisition and/or disposal.

There are currently 231 special use authorizations covering 4,746 acres on the Sumter National Forest. The number of proposals for new authorizations received is growing each year. Most authorizations are for road easements or permits. Other authorized uses include utilities, wells, cemeteries, communication uses, reservoirs, agriculture, churches, experimental or research areas, outfitters and guides and oil and gas pipelines.

About 20 new proposals for authorizations exceeding 1 year in duration are received annually for these types of uses. Numerous requests for authorizations lasting less than 1 year are also received.

Proper boundary line maintenance is an important factor in protecting the national forest from encroachment and trespass. The Sumter National Forest has about 1,750 miles of boundary lines to maintain. Several encroachment and trespass cases are processed every year as a result of poorly maintained boundary lines.

Goals and Objectives

Goal 36 Acquire non-federal lands through purchase, donation or exchange to improve management effectiveness, support specific resource management objectives, and enhance public benefits.

Goal 37 Manage special uses in a manner that protects natural resource values and public health and safety.

Goal 38 Resolve all known title claims and encroachments affecting National Forest System lands.

Goal 39 Provide legal access to National Forest System lands to allow for the use and enjoyment by the public now and in the future.

Standards

FW-98 Rights-of-way (ROW) will be acquired for existing and proposed National Forest System roads and trails. Temporary rights-of-way are acceptable if a permanent right-of-way cannot be obtained.

FW-99 When compatible, manage future acquired lands according to the management prescription direction within which the newly acquired lands are located.

FW-100 Prior to authorizing or re-authorizing new or existing individual well/spring permits or diversions of water from streams or lakes, determine the in-stream flow or lake level needs sufficient to protect stream processes, aquatic and riparian habitats and communities, and recreation and aesthetic values.

General

Standard

This standard is forest-wide.

FW-101 Except in the cases noted below, individual management prescription boundaries may be refined at the project level, through appropriate NEPA documentation, to provide logical, manageable boundaries.

Exceptions:

- allocations made at authority higher than the Regional Forester,
- where the change would involve the boundary or could potentially negatively affect the roadless character of an inventoried roadless area,
- where the change could potentially negatively affect the outstandingly remarkable values of streams meeting the eligibility requirements of Wild and Scenic River designation.

